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A Parametric Analysis of Opportunities to Respond on Academically Engaged Behavior

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A PARAMETRIC ANALYSIS OF OPPORTUNITIES TO RESPOND ON ACADEMICALLY ENGAGED BEHAVIOR

by

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ABSTRACT

A PARAMETRIC ANALYSIS OF OPPORTUNITIES TO RESPOND ON ACADEMICALLY ENGAGED BEHAVIOR

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The purpose of this study was to evaluate the adequate rate of opportunities to respond (OTR) to provide to students that would result in the highest rates of Academically Engaged Behavior. This study utilized a parametric analysis to evaluate and assess the effects of altering the number of OTR provided per minute (i.e., 1, 3, 5) on academically engaged behavior, disruptive behavior, and passive off-task, as an antecedent intervention in a general education elementary school setting. An alternating treatments design was utilized with three treatment conditions. All treatment conditions were implemented in a predetermined pattern, meeting the standards of Kratochwill and colleagues (2010). The data were visually analyzed, and Tau-U was calculated, to determine that in this study, no relation between higher rates of academically engaged behavior and implementation of 1, 3, or 5 OTR was found. Limitations of this study and future research directions are provided.

Keywords: opportunities to respond, academically engaged behavior, parametric analysis

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DEDICATION

My thesis was rightfully dedicated to my close family and friends. Thus, I felt that it only appropriate that this document too be dedicated to the individuals that best fostered its completion: Demi and Justin. I listened to three songs on repeat while writing this document in its entirety; whether that speaks to my sanity or the quality of the music, I don't know. But, you deserve a heartfelt thank you for getting me through the process, and for teaching me two important lessons: 1) it's okay to not be sorry, and 2) sometimes you need to tell others to go love themselves.

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LIST OF ABBREVIATIONS

AEB	Academically Engaged Behavior
ASR	Active Student Responding
ATD	Alternating Treatments Design
CEC	Council for Exceptional Children
DB	Disruptive Behavior
DBR-SIS	Direct Behavior Rating-Single Item Scales
DORF	Dynamic Indicator of Basic Early Literacy-Oral Reading Fluency
EBD	Emotional and Behavioral Disorders
IOA	Interobserver Agreement
OTR	Opportunities to Respond
PII	Problem Identification Interview
POT	Passive Off-Task
SRS	Student Response System
URP-IR	Usage Rating Profile-Intervention Revised

CHAPTER I - INTRODUCTION

Robers, Kemp, Rathbun, and Morgan (2014) reported that in the United States, a total of 40.7% of public school teachers noted that student disruptive behavior has interfered with their teaching. Teachers have reported over the last 20 years that student behavior problems are one of the most substantial challenges that they face in their career (Billingsley, 2001; Darling & Hammond, 2003). Not only are student disruptive behaviors detrimental to classroom instruction, externalizing problems in children have also been shown to forecast antisocial behavior as well as other negative outcomes later in life for these students (Trentacosta, Hyde, Shaw, & Cheong, 2009).

Students engaging in disruptive behaviors hinder their own learning in that they are often sent to the office as a result of their disruptive behaviors (Sugai, Sprague, Horner, & Walker, 2000), or even placed in more restricting environments (McLeskey, Landers, Williamson, & Hoppey, 2012), thus limiting their exposure to typical classroom instruction. Barth, Dunlap, Dare, Lochman, and Wells (2004) have even found that well-behaved students tend to engage in negative behaviors when placed in classrooms with students who engage in high levels of disruptive behavior. Similarly, disruptive classroom behavior can negatively affect surrounding students in that vital classroom instruction time can be misused when teachers have to manage the disruptive behavior of other students in the class (Riley, Mckevit, Shriver, & Allen, 2011). Thus, excessive student disruptions can be detrimental to both the student engaging in the behavior as well as surrounding students in the classroom (MacSuga-Gage & Gage, 2015).

With that in mind, teacher implementation of antecedent or consequent measures to combat such disruptive behavior can alter the level of disruption in a classroom (Lum,

Tingstrom, Dufrene, & Radley, 2017). Consequent strategies, in the form of punishment, have been utilized in educational settings to address student behavior problems (Skinner, Cashwell, & Skinner, 2000). Teachers who have students in their classroom that engage in disruptive or noncompliant behaviors often use reactive behavior management, such as disapproval or reprimands, to address these issues (Pas, Cash, O'Brennan, Debnam, & Bradshaw, 2015). Praise, though, is considered a reactive behavior management strategy, and reactive strategies can improve behavior (Sulzer-Azaroff, & Mayer, 1986). That said, Skinner and colleagues (2000) stated that when teachers use reactive strategies, many students would alter their behavior as a way to continue engaging in inappropriate behavior and escape punishment. The use of reactive strategies by teachers has also been related to their increased stress level, as well as decreased student on-task behavior (Clunies-Ross, Little, & Kienhuis, 2008). On the other hand, Hastings and Bham (2003) suggested that teachers' use of behavior interventions could actually improve their own level of well-being as well as student behavior simultaneously. However, it is important to note that the foundation of student behavior improvement must be based off of effective teaching and behavior management strategies (Brophy, 1986).

Increasing the quality of effective instruction as an antecedent intervention is one avenue for addressing student behavior. It is recommended that to maximize the quality of instruction delivered, the curriculum should be presented at a brisk pace through active instruction (Brophy, 1986). The total amount of learning and content that a student absorbs is bounded by that student's total opportunities of engagement, or total hours in the school day and year (Brophy, 1986). As addressed prior, this opportunity to learn is decreased through disruptive behaviors that lessen students' academically engaged time

(Riley et al., 2011). Quality of effective instruction can also be addressed through altering active student responding (ASR; Heward, 1994). ASR is the observable response that a student makes following the instructor's production of an instructional antecedent (Heward, 1994). As a result of increasing the quantity of ASR during instruction time, research has shown that children better learn the educational material being discussed (e.g., Brophy 1986; Heward, 1994; Malanga & Sweeney, 2008; Pratton & Hales, 1986). ASR may be needed for effective classroom management and improved student achievement, but ASR must first be preceded by the opportunity for students to respond.

Opportunities to Respond

It is essential to provide students with opportunities to respond (OTR) to increase ASR and to promote learning through an effective instruction strategy (Lewis, Hudson, Richter, & Johnson, 2004). An OTR can be defined as a behavior of a teacher that evokes responding from a student (Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008). Some examples of OTR include commands and asking questions (Cuticelli, Collier-Meek, & Coyne, 2016). There are multiple types of OTR, including, individual responding, choral responding, response cards, and a combination of the aforementioned types.

Individual Responding

A common procedure seen in classrooms, individual OTR refers to a process in which the teacher asks a question, the students raise their hands, and then the teacher calls on an individual student to respond (Haydon et al., 2010). Although it is one of the most common student responding procedures utilized in classrooms, individual OTR have a limitation in that with this procedure only a small portion of students actively

participate and raise their hands (i.e., typically those that are higher achieving students; Haydon et al., 2010).

In a study conducted by Wolery, Ault, Doyle, and Gast (1992), the authors evaluated the effects of individual responding on teaching word reading. During small group instruction the teacher would present the class with a card and say, “Look.” After all students saw the card the teacher would say “What word?” followed by the name of an individual student and then snap her fingers to signal the student to respond (Wolery et al., 1992). These procedures are similar to those utilized in other studies that implement individual opportunities to respond in a classroom setting.

The study compared conditions involving both individual and choral responding (described in the section below) during three different experiments evaluating the effectiveness of teaching word reading. The participants in this study were 4 students with intellectual disabilities. Experiment 1 held the number of exposures per stimulus equal across individual versus choral responding conditions though OTR were unequal, while Experiment 2 compared conditions when OTR were equal but stimulus exposure was unequal across conditions (Wolery et al., 1992). Finally, Experiment 3 compared the most effective conditions from the prior two experiments, and all three experiments utilized an alternating treatment design. For the results of this study, choral responding was more effective in Experiment 1, individual responding was more effective in Experiment 2, and that only slight differences were found in Experiment 3 when comparing the more effective individual responding and choral responding condition (Wolery et al., 1992).

Choral Responding

Another OTR strategy, choral responding, helps address the limitation of individual responding such that only certain students consistently raise their hands. Choral responding engages a larger portion of the class in that its procedures call for the teacher to provide a question to which all students are asked to respond aloud simultaneously (Haydon et al., 2010). Although choral responding increases OTR for all students, and can be advantageous over individual responding in that sense, its limitation is that the presenter of the OTR (i.e., the teacher) cannot hear the answer of each individual student. As a result, students may be praised for inaccurate responding or may be putting forth little effort at attempting to respond appropriately, and teachers have little knowledge of where individual students fall on their understanding of topics covered.

As addressed above, Wolery and colleagues (1992) evaluated choral responding in the study as well. The study took place in an elementary school classroom, and the choral responding procedures were such that during circle time the teacher would hold up a card to the class and say, "Look." Once the teacher ensured that the students viewed the card, the teacher would provide the class with an opportunity to respond by saying "What word?" (Wolery et al., 1992). The students would then respond in unison when the teacher signaled them to do so by snapping. The procedures used by Wolery and colleagues (1992) are representative of the typical procedures in place for choral responding.

Response Cards

As an alternative, a strategy for providing OTR in a form that all student responses can be evaluated has been proposed. Response card procedures involve the use

of small boards that students display their answers on as a reply to a question posed by the teacher (Hardesty, McIvor, Wagner, Hagopian, & Bowman, 2014). Schnorr, Freeman-Green, and Test (2016) conducted a review of the literature to evaluate the use of response cards. This study examined the evidence base for increasing opportunities to respond through the use of response cards for students both with and without disabilities. Schnorr and colleagues (2016) investigated six studies using response cards in elementary school classrooms. The dependent variable for the studies evaluated ranged from student on-task behavior, to disruptive behavior, and some included accuracy of student responding and academic achievement. Two of the six studies evaluated were rated as high quality, with the remaining four rated as acceptable quality. Overall it was found that there is a moderate level of evidence for using response cards as an evidence-based practice (Schnorr et al., 2016).

Response cards can take many forms and have been used to teach a variety of subjects from preschool to university educational levels (Hardest et al., 2014). Studies such as Davis and O'Neill (2004) and Gardner, Heward, and Grossi (1994), described in the following section, have used white boards as a form of response cards. Blood (2010), described in the following sections, conducted a study that utilized clickers as a form of response cards to evaluate a polling system called Student Response System (SRS). McCargo (2017) implemented an intervention in three high school classrooms where an application called Plickers® was used as a form of response card responding. Plickers® is a free web-based application where teachers upload questions online, and then with the use of a projector they present these questions as opportunities to respond to the class. All students have their own Plicker®, which is a 5.5-inch by 5.5-inch piece of paper with a

four-sided QR code printed on the center, each side of the square QR code representing a different possible answer (i.e., A, B, C, or D). To respond to the questions, students oriented their QR code to the desired answer and held it up for their teacher to scan with his or her smart phone. With this form of response cards, student responses were automatically transmitted to the web-based application that allowed the calculated correct responding for the teacher. As described above, response cards can take many different forms, though all accomplish the same purpose of having all students respond to the question presented.

Literature Reviews of OTR

Sutherland and Wehby (2001) conducted a review of the literature as a way to examine the effect that increasing opportunities to respond has on academic and behavioral outcomes. This literature review focused on students with emotional and behavioral disorders (EBD). Out of the six articles that were reviewed, Sutherland and Wehby (2001) concluded that all suggested that higher task engagement and academic achievement occurred as a result of increased rates of OTR. Similarly, lower rates of inappropriate behavior were observed in the classrooms as a result of the increased OTR.

In a separate review of the literature, MacSuga-Gage and Simonsen (2015) examined 15 studies to determine the effect of increased OTR on individual student behavior. Unlike Sutherland and Wehby (2001), MacSuga-Gage and Simonsen (2015) evaluated the effects of increased OTR within the class-wide context, as opposed to individual students with a disability. MacSuga-Gage and Simonsen (2015) found similar outcomes though, in that positive behavioral and academic outcomes resulted when OTR were increased. As a result of their literature review, MacSuga-Gage and Simonsen

(2015) concluded that a rate of approximately 3-5 OTR per minute is suggested for behavior change.

Rate of OTR in Literature Base

Outlined above are multiple procedures used to provide OTR in the classroom setting, as well as literature reviews exemplifying the evidence behind the use of OTR. The Council for Exceptional Children (CEC) has proposed guidelines in regard to adequate levels of OTR to be provided for children with high-incidence disabilities, suggesting that students be prompted at a minimum rate of 4-6 times per minute (CEC, 1987). Although this suggestion is a helpful starting place when considering OTR implementation, there is a lack of empirical evidence supporting this recommended rate. In addition, this recommendation is for children with disabilities, thus there is even less clarity surrounding appropriate rates to provide to general education students. Beyond the suggestion outlined above by the CEC, MacSuga-Gage and Simonsen (2015) recommend 3-5 OTR provided per minute, yet there is much work to be done to solidify empirically based rates of OTR to be provided through a study directly comparing these rates. Outlined below are various studies implementing OTR and the results found in relation to the OTR rates that the authors chose to implement for their interventions.

In one study, Davis and O'Neill (2004) compared the effectiveness of hand-raising to that of response cards, though the exact rate of OTR provided in this study was not clearly stated. This study was conducted in a middle-school resource class where four dependent variables were measured, including off-task behavior, percent of correct academic responses, percent of trials that students responded with hand raising, and percent of trials in which students made any academic response. Four students

participated, two of which were learning English as a second language, and all participants had some form of learning disability. Students were encouraged to raise their hands to respond to teacher provided questions during the hand raising intervention. The students would earn a bean for raising their hand and responding correctly, and the beans would be added up to earn a field trip or class activity (Davis & O'Neill, 2004). Erasable white boards were used during the response card intervention as a way for the students to display their answers. Students earned beans during this phase for providing a response regardless of accuracy.

The results of this study were inconsistent in that only half of the participants demonstrated decreased off-task behavior during the response card intervention. It was found, though, that students' rate of accuracy of responding was increased in the response card phase, and average weekly quiz scores were higher, compared to the hand-raising condition (Davis & O'Neill, 2004). One limitation to consider when describing these results is that the number of OTR provided per minute was not clearly stated for either phase. This could have an effect on the results if a different amount of OTR was provided during one of the phases. Also, another important limitation to consider is that half of the participants were receiving ESL instruction. Based on the data, the researchers found response cards were more effective, though students themselves noted a preference for hand raising, which may have been a result of ESL students finding the response card condition aversive due to difficulties reading or writing (Davis & O'Neill, 2004).

Blood (2010) utilized an ABABC design to determine the effects of a clickers SRS pooling system on student response rate, academic achievement using daily and end of phase quizzes, and on-task behavior. The rate of OTR provided during the intervention

phase ranged from 0.75-1.0 OTR provided per minute. Five high school students in special education (two students identified with Emotionally/behaviorally disabled, two students that had a ruling of Health Impaired, and one identified with autism) participated in this study and used the SRS to mark their responses to true/false and multiple-choice questions. Blood (2010) found no functional relation between on-task behavior and academic achievement, nor a clear increase in task engagement, though it was found that students responded more frequently to questions when using the SRS.

Lambert, Cartledge, Heward, Lo, and Koegel (2006) compared the efficacy of two types of OTR strategies, by comparing single-student responding to response card responding. Using a BCBC design, Lambert and colleagues (2006) examined the effects of the two conditions on disruptive behavior and academic responding. The participants of this study were nine fourth grade students who were chosen based on a prior history of disciplinary issues and disruptive classroom behavior. During the single-student, or individual responding, phase, the teacher would call on one student who raised their hand to provide the answer to the questions posed. During the response card condition, approximately 1.2 OTR were provided per minute, and students had erasable whiteboards to write their responses on.

Compared to the single-student responding condition, there were sizable reductions in disruptive behavior as well as increases in academic responding during the response card phase (Lambert et al., 2006). Although a decrease in disruptive behavior is valuable, it is important to consider that this decrease does not always signify an increase in academically based or appropriate behavior.

Gardner et al. (1994) also studied the effects of hand-raising and response cards on active student responding, but they focused their efforts classwide. Mean rate of OTR provided during the hand-raising condition was 1.54 per minute, while mean rate was 0.99 OTR per minute in the response card condition (Gardner et al., 1994). This study used a single fifth grade classroom to evaluate the use of response cards using an ABAB design. Classwide data were collected on academic performance, while five target students were selected for observation. The conditions looked similar to that of Lambert and colleagues (2006), in that during the hand-raising condition one student who raised their hand would get chosen to answer the question provided, while in the response card condition students had a white board on which to write their short response. Active student responding for the target students was 14 times higher in the response card conditions than in the hand-raising condition (Gardner et al., 1994). Similarly, all students in the class scored higher on the next day quizzes and two-week review tests after the response card condition. This study did not focus data collection on student engagement in the various conditions.

Narayan, Heward, Gardner, Courson, and Omness (1990) also evaluated the effects of a hand-raising OTR intervention and a response card intervention. In this study, a mean level of 1.9 OTR per minute was provided during the hand raising condition, while a mean level of 1.2 OTR per minute was provided during the response card condition. These are both slightly increased rates compared to the rate of OTR provided by Gardner and colleagues (1994). The participants in this study consisted of 20 fourth grade students, and the two conditions were compared using an ABAB design. The dependent variables measured in this study were academic achievement, measured using

permanent product, and number of responses as well as accuracy of responses, both measured via direct observation.

The hand-raising condition was implemented during baseline, where the teacher would ask a question and call on an individual student to answer. During the intervention condition, response cards were used for the students to provide their answers. Rate of active student responding was higher in the response card condition (M = 15.6; range = 13.5 to 17.6) compared to that measured in the hand-raising condition (M = 11.6; range = 9.2 to 13.7). Similarly, daily quiz scores were higher following the response card condition (M = 8.2 and 7.8) compared to the scores following hand-raising condition (M = 6.5 and 7.3).

In a study by Sindelar, Bursuck, and Halle (1986) OTR were provided at a rate of 2 per minute for both a single-student response condition and a choral responding condition. Eleven elementary-aged students (8 with a learning disability and 3 with a mild intellectual disability) participated in this study where the primary dependent variables were on-task behavior and academic achievement. On-task behavior was measured via direct observation while academic achievement was measured using permanent products. Students sat in a semicircle during the conditions and were called on individually to respond during the single student responding condition, and responded in unison during the choral responding.

During the choral responding condition, Sindelar and colleagues (1986) found a small improvement in the rate of acquisition and maintenance. Findings with respect to academic achievement indicated that words were learned at a faster rate when taught during the choral responding phase. The differences found in rate of acquisition were

small though, and no functional relationship was found for on-task behavior (Sindelar et al., 1986).

In a more recent example, Haydon, Mancil, and Loan (2009) implemented a choral OTR intervention where at least 3 OTR per minute were provided. This study utilized an ABA design to implement the intervention with a fifth-grade student who was at-risk for emotional and behavior disorders. Data were collected on the target student's on-task behavior and correct responses, where the intervention itself consisted of 10-minute sessions with the teacher cueing all students to respond aloud to presented questions and providing feedback. Haydon and colleagues (2009) found that the intervention increased the target student's on-task behavior and correct responding. Due to class scheduling, a second intervention phase was unable to be collected, which stands as a limitation because this lack of reimplementation does not allow for replication of intervention results.

Next, Sutherland, Alder, and Gunter (2003) used daily performance feedback to increase teacher's rate of OTR provided to 3 OTR per minute. The dependent measures in this study were on-task behavior, disruptive behavior, and correct responding, which were all measured via direct observation of the nine elementary-aged participants. All participants were in one special education classroom and were identified as students with EBD. Results for this study indicated that the percent of time that the students were on-task increased during the intervention, while rate of disruptive behavior decreased slightly (Sutherland et al., 2003). Student rate of correct responding increased during the intervention as well.

MacSuga-Gage and Gage (2015) also delivered OTR to their participants at a rate of 3 per minute. This study used a within-subject interrupted time-series design to assess the correlation between the increase of teacher directed OTR and students' behavior and academic outcomes (i.e., phonemic awareness). Five teachers and 30 first through third grade students participated in this study. Student behaviors of academic engagement and disruptive behaviors were measured by teacher's use of Direct Behavior Rating-Single Item Scales (DBR-SIS).

There was no relationship found between increased OTR and academic achievement. This was assessed through the use of the Dynamic Indicator of Basic Early Literacy-Oral Reading Fluency (DORF), which is a standardized progress monitoring measure that assesses phonemic awareness. But there was a statistically significant positive relationship found between increased OTR and student academic engagement, with an average correlation of 0.34 ($p < .05$; MacSuga-Gage & Gage, 2015). Though these findings are important, a large limitation of this study revolves around the fact that teacher report of student was behavior utilized, and no direct observations took place, thus putting question on the validity of the results found (MacSuga-Gage & Gage, 2015).

In another study providing participants with OTR at a rate of at least 3 per minute, Haydon and Hunter (2011) compared the intervention effects of single-student responding to unison hand-raising using an ABCBC design. Two middle school-aged general education students participated in this study, and the dependent variables measured were on-task behavior, academic achievement, correct responses, teacher rate of praise statements, and teacher rate of redirection. Academic achievement was measured using permanent product (i.e., grades) while all others variables were measured

using direct observation. The single-student response looked identical to those seen prior, where the teacher would call on one student to answer the question, though in the unison hand-raising condition, the students were encouraged to raise their fingers at the same time to answer the question that was provided. Thus, in this study, the unison hand-raising condition could be considered a form of choral responding.

During baseline, praise statements as well as OTR provided were low, while rates of redirection were high. Redirections decreased slightly during the intervention phases, while praise increased in both conditions. Also, slightly higher levels of on-task behavior, correct responses, and test score percentages were seen during the unison hand-raising condition compared to the single-student responding condition (Haydon & Hunter, 2011). With that in mind, the lack of reversal or withdrawal in the design utilized by Haydon & Hunter (2011) prevents a demonstration of experimental control through replication of the baseline, making it difficult to rule out confounding variables that may have contributed to behavior change.

Overall Limitations

There are many characteristics of the OTR literature base, exemplified above, that leave the majority of the findings with the inability to generalize to the greater population (i.e.: general education students). The prior studies focus on single student case studies or limited sample sizes as opposed to classwide research. Classwide research, as opposed to single student case studies, would provide a larger amount of student data, which could allow for a greater understanding of the effects of OTR across a range of student behaviors seen in the classroom. Next, many of the aforementioned participants were in

special education classrooms, with few studies examining general education students, leaving this population largely unrepresented in the OTR literature base.

Comparably, in all of the above-mentioned studies, though several studies found their form of OTR intervention to increase or decrease a targeted behavior, none provide OTR at the CEC approved rate of 4-6 per minute (CEC, 1987), and only few hitting the lower end of MacSuga-Gage and Simonsen's (2015) recommendation of 3-5 OTR per minute. In the OTR literature base there is a wide range of OTR rates that are provided to participants, those outlined above ranging from 0.75 to at least 3 per minute. Thus, the lack of consistency in rates provided limits the ability of these studies to serve a guideline for teachers in terms of how many OTR to provide for their students.

Purpose of the Present Study

Further research was needed to directly compare the effects of altering rates of OTR provided to general education students, and to determine a reasonable criterion of OTR to be provided to promote behavior change in general education classrooms. This study was designed to evaluate and establish the adequate rate of OTR to provide to students. In this study, a parametric analysis was conducted on the number of OTR provided per minute (i.e., 1, 3, 5) on academically engaged behavior (AEB) and disruptive behavior in the general education elementary school setting.

Research Questions

1. Is there a functional relation between implementation of 1, 3, or 5 OTR per minute as an OTR intervention and higher rates of classwide AEB?
2. Is there a functional relation between implementation of 1, 3, or 5 OTR per minute as an OTR intervention and lower rates of classwide DB?

3. Will elementary school teachers rate the use of increasing OTR as a socially valid method for addressing student behavior?

CHAPTER II - METHOD

Participants and Setting

The students in three general education classrooms from a single elementary school (i.e., 1st, 4th, or 5th, grade) in the Southeastern United States served as participants for this study. Classrooms were selected based off of school administrator referrals of classrooms that were experiencing high levels of office discipline referrals. Following the referral, the primary investigator contacted and interviewed the teacher of the referred classrooms as a way to gain further information on the disruptive behavior that was occurring in their classes. This interview then assisted in the development of the disruptive behavior definition utilized during observations.

Authorization to conduct this study was obtained from school administrators (see Appendix A), and informed consent was collected from all participating teachers (see Appendix C). As no identifying student data were collected, it was not necessary to obtain student assent, nor parent consent. Furthermore, all data were combined and displayed as classwide data, thus no individual student data were reported. In addition, this study was submitted to and approved by a university Institutional Review Board prior to the initiation of data collection (see Appendix B). Interviews also took place for all participating teachers as a way to obtain their basic demographic information (e.g., gender, age, years of teaching experience), as well as their class's demographic information (e.g., race, gender, special education ruling; see Appendix D).

Classroom A was a first-grade class consisting of 20 students (9 males). This class consisted of eleven Caucasian students, and nine African American students. Of the twenty students in this class, two received special education services under the eligibility

category of Specific Learning Disability. Classroom A was taught by a 29-year-old Caucasian female, who was in her first year of teaching. All observations were conducted immediately following the morning announcements, while the class reviewed their morning worksheets.

Classroom B was a fourth grade English/Language Arts class that consisted of 28 students (14 males). In Classroom B, nineteen of the students were Caucasian, and nine of the students were African American. No students in Classroom B received special education services. The teacher in Classroom B was a 26-year-old Caucasian female in her first year of teaching. All observations were conducted during lecture, which was about an hour into the class period, and followed the completion of bell work and homework review.

Classroom C was a fifth grade English/Language Arts class that consisted of 17 students (11 males). Classroom C contained 11 Caucasian students, and 6 African American students. In Classroom C, 5 of the students received special education services for Autism. Classroom C's teacher was a 23-year-old Caucasian female in her first year of teaching. Observations were conducted in Classroom C immediately following Library time/activity, during a classwide lecture.

Materials

Multiple materials were utilized during this intervention, including a teacher script, a sign to display the correct number of OTRs to provide for the day, the number of OTR provided, and time that the observation was to end. Additional materials that were utilized in this study were, a daily rating scale, as well as a social validity measure.

Teacher Script

A teacher training script was used to describe the steps for training the teacher on the intervention (see Appendix E). The script included information to be provided verbatim to each participating teacher.

Social Validity

Usage Rating Profile-Intervention Revised

Upon completion of the study, participating teachers were encouraged to rate increasing OTR as an overall intervention on the Usage Rating Profile-Intervention Revised (URP-IR; Chafouleas, Briesch, Neugebauer, & Riley-Tillman, 2011; see Appendix G). The URP-IR consists of 29 items, and was used to assess various factors that influence intervention usage in a school-based setting. Each item was rated on a 6-point Likert scale which ranged from a score of 1, representing strongly disagree, to a score of 6, representing strongly agree. Acceptability, Understanding, Home-School Collaboration, Feasibility, System Climate, and System Support are the six subscales that make up the URP-IR. No modifications were made to the URP-IR for the current study.

Daily Rating Scale

A brief rating scale was provided daily to participating teachers after implementation of the intervention (see Appendix F). This rating scale contained three items and addressed teacher perception of student behavior that day, time frame of intervention implementation, as well as perceived difficulty level of implementing the intervention that day. Teachers rated question one on a 10-point Likert scale that ranged from 10% to 100%, and rated questions two and three using a 6-point Likert scale that ranged from strongly disagree to strongly agree. All questions were phrased in a positive

manner and no questions were reverse scored. There are no psychometric data available for this measure, but this rating scale was used to assess teacher opinions of varying rates of OTR per minute requirements.

Dependent Measures

Student Behavior

The primary dependent variable assessed during this study was academically engaged behavior. AEB was defined as "the student being actively involved or attending to (e.g. looking at) independent seatwork, teacher instruction, designated classroom activities, and/or engaging in task related vocalizations with teachers and/or peers" (Lambert et al., 2015, p. 418).

The secondary dependent measure was student disruptive behavior (DB). Disruptive behavior was defined with the use of a Problem Identification Interview (PII; Kratochwill & Bergan, 1990; see Appendix H). As a way to narrow down the three most frequently occurring disruptive behaviors in each classroom, all participating teachers were interviewed using the PII (e.g., out of seat, playing with objects, inappropriate vocalizations, etc.). This interview then helped create the definition of DB for each class. In addition to the behaviors that were determined from the PII, the definition of DB incorporated the definition from *The Tough Kid Tool Box* (i.e., playing with objects, out of seat, noncompliance, and talking out; Jenson et al., 1995). In this study, playing with objects was defined as manipulating items that are unrelated to the task demand; out of seat was defined as the student's bottom being lifted from the assigned chair or location without teacher permission; noncompliance was scored if following delivery of a

classwide directive a student fails to initiate compliance; talking out was defined as any audible vocalization occurring when not instructed to do so.

An additional dependent measure, passive off-task (POT), was included in this study. POT was coded for and defined as when the observed student was not attending to the assigned task, nor being disruptive, but was engaging in passive or inattentive behavior (e.g., sleeping, or staring off). The three above mentioned behaviors were all mutually exclusive.

Data Collection

Observations took place in participating classrooms at least four times a week. The researcher, as well as trained observers, collected data on the dependent variables using a 10-second momentary time sampling recording procedure. All observations were 20-minutes in length. The observations took place during a time identified by the teacher when students were least academically engaged, and was also required to be a time slot that the intervention was applicable (i.e., not silent reading). During observations, the observers used an audio recording to cue each 10-second interval and stood in an unobtrusive location (e.g., the back of the classroom). An individual fixed rotation was used for observations, such that one student was observed as AEB, DB, or POT (neither), at the start of each 10-second interval (see Appendix I), followed by the observation of a subsequent student at the beginning of the subsequent interval. This pattern was continued until all students had been observed, where the researcher then restarted, following an identical pattern around the classroom until the completion of the 20-minute observation. The observation pattern described was based approximately off of the seating arrangement in the classroom. This observation technique was chosen based off

of previous research that has shown this method to yield a valid estimate of group behavior (Briesch, Hemphill, Volpe, & Daniels, 2015; Dart, Radley, Briesch, Furlow, & Cavell, 2016). A classwide percentage of intervals of behavior occurrence will be reported below. This percentage was computed by taking the total number of intervals of occurrence of one dependent variable and dividing it by the total number of intervals in the observation, and then multiplying by 100 to achieve a percentage. Data collection procedures did not change across conditions, and all dependent variables are reported separately below.

In addition, a frequency count was collected of classwide OTR provided during each observation. In the current study OTR were defined as the presentation of an antecedent stimulus (i.e., a question provided) that evoked active student responding.

Design

An alternating treatments design (ATD) was implemented in three general education elementary school classrooms as a way to rapidly determine the effectiveness of varying rates of OTR provided per minute for increasing AEB, and decreasing DB and POT through parametric analysis. In this study, varying rates of OTR (i.e., 1, 3, and 5 per minute) were implemented in rapid succession as the independent variable. This design allowed for each intervention condition to be compared to all other intervention conditions. As recommended by Kratochwill and colleagues (2010), this study included three attempts to demonstrate intervention effect through the three classrooms participating in this study. Kratochwill and colleagues (2010) also suggest that an ATD design have five repetitions of the alternating sequence per participant, including at least five data points per condition. Following the standards outlined above, the treatment

sequence for Classroom A was ABCABCABCABCABC, treatment sequence for Classroom B was BCABCABCABCABCA, and Classroom C was CABCABCABCABCAB.

Procedures

Teacher Training

During teacher training, the primary investigator met with all participating teachers and went over the teacher training script (see Appendix E). The primary observer provided a definition of OTR as well as examples and non-examples, and the participating teachers then were required to provide examples of OTR that they could provide to their class. Teacher examples were followed by feedback from the primary observer and were in place to show understanding of requirements. The training was terminated upon the teacher reaching 100% integrity based off of Appendix J. IOA on teacher trainings was obtained for 100% of teacher training sessions.

Independent Variable

The independent variable consisted of three different treatment conditions that altered the rate of OTR that were provided to the class. Prior to the intervention implementation, during teacher training, the teacher was informed how to implement each treatment condition. As addressed in the teacher training script (see Appendix E), all participating teachers were presented with a predetermined intervention schedule. One treatment condition (i.e., 1 OTR per minute, 3 OTR per minute, or 5 OTR per minute) was implemented each day, and all treatment conditions were implemented for at least five data points across the study. Treatment conditions were rotated such that no condition was reimplemented prior to the implementation of each of the other two

conditions. At the end of each observation, participating teachers completed a daily questionnaire based off of the treatment condition that was implemented that day (see Appendix F).

Treatment Condition A

During this treatment condition, participating teachers were instructed to deliver 1 OTR per minute for the entirety of the 20-minute observation, for a total of 20 OTR delivered to the class. A small sign brought by the primary observer was present in the classroom to signify the correct number of OTR for the teacher to provide that day, the current number provided, and the end time of the observation.

Treatment Condition B

Participating teachers were requested to deliver 3 OTR per minute during this treatment condition. Across the 20-minute observation, a total of 60 OTR were provided to the class during this condition. As addressed in the prior treatment condition, a small sign was present to signify the number of OTR to be provided that day, the current number provided, and the end time of the observation.

Treatment Condition C

This treatment condition consisted of the teacher delivering 5 OTR per minute during the 20-minute observation. During this treatment condition there were a total of 100 OTR provided to the class. As a way to signify the correct number of OTR to deliver during this treatment condition, a small sign was present labeling the correct number of OTR for the teacher to provide for the day, the current number provided, and the end time of the observation.

Interobserver Agreement

Interobserver agreement (IOA) was assessed between the primary observer and a secondary observer for at least 30% of observations within each condition, as suggested by the Kratochwill and colleagues (2010). IOA was calculated by taking the total number of agreements and dividing them by the combination of agreements and disagreements, and then multiplying by 100 to obtain a percentage. IOA was reported as the total agreement of occurrence and nonoccurrence of behaviors, and was calculated separately for all dependent variables as in Lum and colleagues (2017).

Observers were trained on the behavioral definitions and momentary time sampling observation procedures prior to collecting any data for the current study. Observers were also trained on the procedures of this study, including the usage of the flip sign, treatment integrity, and OTR counting. All observers were required to attain a 90% IOA criterion during a training session, and were graduate students in a school psychology program. It was required that all secondary observers maintain a minimum of 80% agreement when collecting data with the primary observer. If 80% IOA was not maintained, a retraining on the operational definitions as well as observation techniques took place prior to further data collection—which occurred on two instances.

Classroom A's IOA was collected for 37% of all observations, with IOA obtained for 33% of observations during treatment condition A, and 40% of observations for both treatment conditions B and C. IOA for AEB in Classroom A averaged 88% (range = 82-95%) across all conditions, DB averaged 92% (range = 83-98%) across all conditions, and POT averaged 95% (range = 89-97%) across all treatment conditions. Total IOA for

AEB, DB, and POT combined averaged 92% (range = 87-96%) across all treatment conditions.

Classroom B's IOA was obtained for 40% of all observations across all three treatment conditions. IOA for AEB in Classroom B averaged 84% (range = 74-93%) across all conditions, DB averaged 89% (range = 78-96%) across all conditions, and POT averaged 92% (range = 79-98%) across all treatment conditions. Total IOA for AEB, DB, and POT combined averaged 88% (range = 82-96%) across all treatment conditions.

Classroom C's IOA was collected for 35% all observations, with IOA obtained for 33% of observations for both treatment condition A and C, and 40% of observations for treatment condition B. IOA for AEB in Classroom C averaged 91% (range = 89-96%) across all conditions, DB averaged 93% (range = 88-97%) across all conditions, and POT averaged 97% (range = 92-100%) across all treatment conditions. Total IOA for AEB, DB, and POT combined averaged 94% (range = 92-97%) across all treatment conditions.

Kappa

Using the formula outlined by Uebersax (1982), the Kappa coefficient was calculated for AEB, DB, and POT, alongside IOA as outlined above. A more stringent measure of IOA, Kappa ranges from -1.00 to +1.00 and determines the proportion of agreement between observers when chance is accounted for. The interpretation outlined in Viera and Garrett (2005) was used when calculating Kappa in this study, where a value less than 0.00 signifies less than chance agreement, between 0.01 and 0.20 is representative of slight agreement, 0.21 to 0.40 is suggestive of fair agreement, values from 0.41 to 0.60 are considered moderate agreement, 0.61 to 0.80 reflect substantial agreement, and finally values between 0.81 and 0.99 indicate almost perfect agreement.

For Classroom A, the mean Kappa value was 0.67 (95% CI = 0.61-0.74), which indicates that there was a 'substantial' agreement between observers across all three dependent variables. Classroom B had a mean Kappa value of 0.52 (95% CI = 0.44-0.59), signifying that there was 'moderate' agreement between observers for AEB, DB, and POT. The mean Kappa value for Classroom C was 0.68 (95% CI = 0.60-0.75), which suggests that there was 'substantial' agreement between observers for all three dependent variables.

Procedural Integrity

A procedural integrity checklist was utilized during teacher training. The procedural integrity checklist outlined all of the steps that the primary investigator utilized to train the participating teachers (see Appendix J). Any score below 100% on the procedural integrity checklist would result in retraining of the teacher until 100% integrity was reached. IOA for procedural integrity was collected for 100% of teacher trainings. The primary observer rated procedural integrity as 100% for all teacher trainings, with 100% IOA.

Treatment Integrity

The primary data collector completed a checklist that contained all steps necessary for proper implementation of the intervention each day, as a way to assess treatment integrity (see Appendix K – M). This checklist was utilized to evaluate the presence of correct intervention materials in the room (i.e., sign noting correct number of OTR to be delivered that day), as well as necessary steps for the treatment condition. If any steps were missed on the treatment integrity checklist, the primary investigator contacted the classroom teacher and went over the intervention procedure that was

omitted. IOA for treatment integrity was collected during 100% of observations within each treatment condition across participants.

The treatment integrity for Classroom A averaged 90% (range = 86-100%) for treatment condition A, 97% for treatment condition B with a range of 93-100%, and 99% (range = 96-100%) for treatment condition C. Total treatment integrity for Classroom A averaged 95% with a range of 86-100%.

Treatment integrity for Classroom B averaged 94% (range = 86-100%) for treatment condition A, 98% (range = 93-100%) for treatment condition B, and finally 99% for treatment condition C with a range of 96-100%. Classroom B had a total average treatment integrity of 97%, ranging from 86-100%.

Classroom C's treatment integrity averaged 90%, with a range of 86-100% for treatment condition A, 96% (range = 93-100%) for treatment condition B, and 96% (range = 95-96%) for treatment condition C. Total treatment integrity for Classroom C averaged 94% (range = 86-100%). Across all three classrooms, the most common treatment implementation mistake that resulted in imperfect treatment integrity percentages was providing too many or too little OTR. This treatment integrity step could be missed by providing at least one too many or one too few OTR. This is important to consider because it could affect that ability for the participants to distinguish between the conditions if too many or few OTR were provided.

IOA for treatment integrity was collected for a minimum of 30% of observations across all conditions (Classroom A: 38%; Classroom B: 40%; Classroom C: 35%). IOA for Treatment integrity was calculated by dividing the number of agreed upon steps

completed by the total number of treatment integrity steps. Treatment integrity IOA was 100% across all treatment conditions for each classroom.

Data Analysis

Visual analysis was used to determine level, trend, variability, and divergence between conditions. Visual analysis was also used to evaluate data overlap across conditions, and consistency of data patterns across similar conditions (Horner et al., 2005). Visual analysis served as the primary means for determining the effects of the intervention in the current study.

Tau-U was calculated following the final intervention condition. Tau-U accounts for trend and non-overlap across treatment conditions, and is an effect size that produces a numerical estimation of the effect of a given intervention (Parker, Vannest, Davis, & Sauber, 2011; Schlesinger & Gray, 2017). As opposed to other non-overlap measures, Tau-U presents a more thorough index of change between treatment conditions. This is because the score distribution for Tau-U does not display artificial ceilings (Parker et al., 2011). The guidelines for interpretation of Tau-U proposed by Vannest and Ninci (2015) are as follows, 0.20 is considered a small change, 0.20 to 0.60 is a moderate change, a large change between 0.60 and 0.80, and everything above 0.80 is classified as a very large change. All intervention conditions were compared to each other, and then a weighted average was calculated.

CHAPTER III - RESULTS

Classroom A

During this treatment condition, AEB was fairly stable with a slight increase in the final two data points, though little trend was observed. The students' in Classroom A demonstrated AEB, during treatment condition A, for a mean of 74% of observed intervals (range = 72-80%; see Figure 1, top panel). During treatment condition B, a downward trend was observed. During this treatment condition, the students' in Classroom A demonstrated AEB for a mean of 73% (range = 66-80%) during observed intervals. Finally, during treatment condition C, AEB data were more variable, yet little trend was observed. During this treatment condition, classwide AEB had a mean of 78% with a range between 68-86%. Overall, the data patterns for this classroom in terms of AEB were variable with no treatment condition consistently demonstrating a higher percentage of AEB. Though treatment condition C resulted in the highest mean percentage of AEB across observations, treatment condition C also had the largest range of AEB percentages across observations. The effect sizes are displayed below in Table 1. The weighted average for this intervention had a moderate effect overall with a Tau-U score of 0.21.

In terms of DB, the data for treatment condition A were fairly stable, with little to no trend across observed intervals (see Figure 1, middle panel). The mean percentage of DB for this condition was 16% (range = 10-18%). The observed intervals for treatment condition B were stable with an upward trend. The students in Classroom A displayed a mean of 17% for DB with a range of 8-23% during treatment condition B. The data during the observed intervals for treatment condition C in Classroom A had some

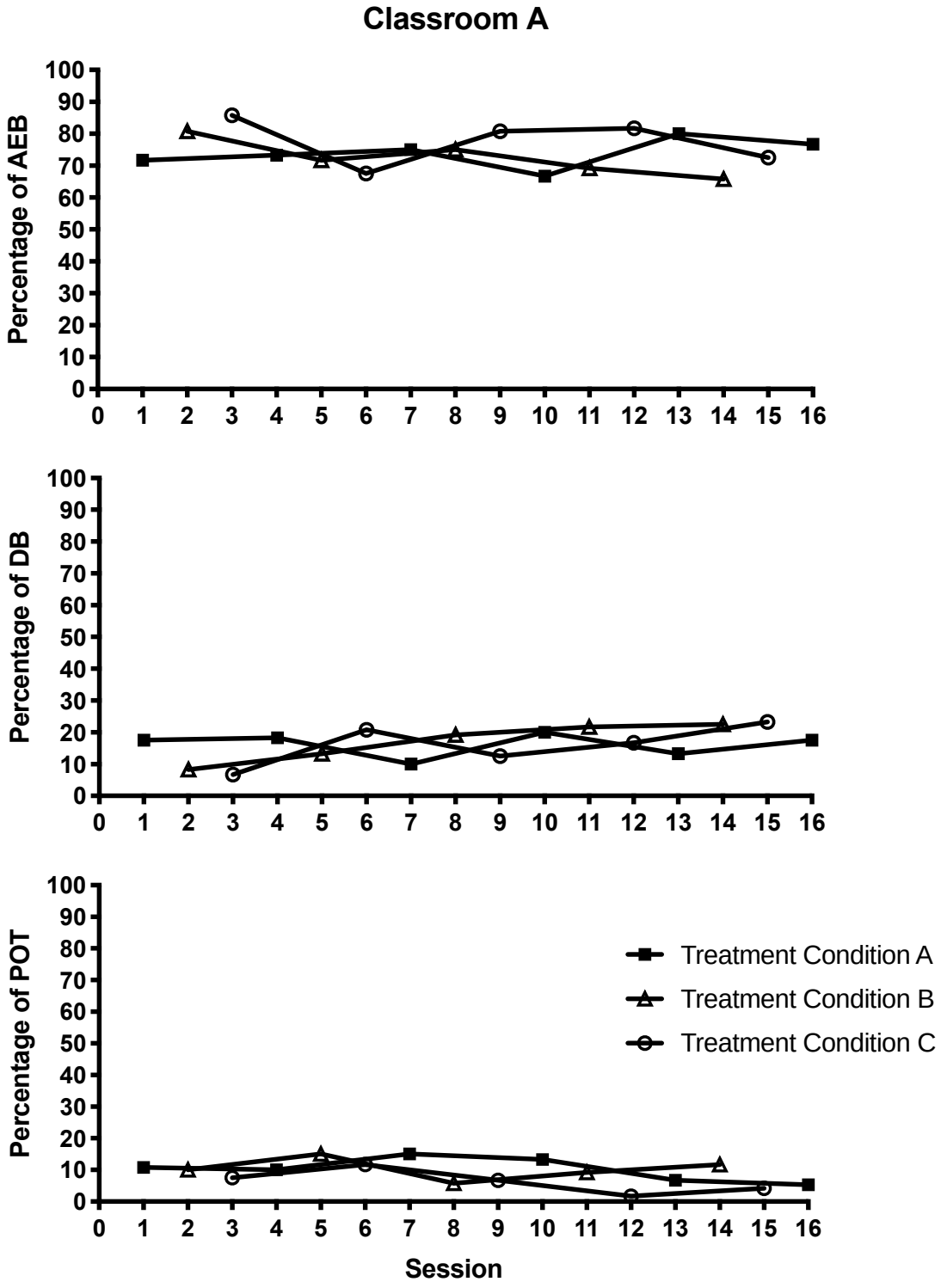

Figure 1. Classroom A's percentage of intervals of occurrence for academically engaged behavior, disruptive behavior, and passive off-task, across treatment conditions.

variability, as well as an increasing trend. During treatment condition C, the mean for DB was 16% for Classroom A (range = 7-23%). Little to no differences in mean percentages of DB were observed in Classroom A. Effect sizes are shown below in Table 1, with the weighted average for this intervention having a small effect overall (0.04).

Table 1 *Effect Size Calculations for Classroom A*

	Tau-U	Effect
Academically Engaged Behavior		
Treatment Condition A/ B	0.20	Small
Treatment Condition B/ C	0.44	Moderate
Treatment Condition C/ A	0.40	Moderate
Weighted Average	0.21	Moderate
Disruptive Behavior		
Treatment Condition A/ B	0.23	Moderate
Treatment Condition B/ C	0.12	Small
Treatment Condition C/ A	0.00	Small
Weighted Average	0.04	Small
Passive Off-Task		
Treatment Condition A/ B	0.00	Small
Treatment Condition B/ C	0.56	Moderate
Treatment Condition C/ A	0.50	Moderate
Weighted Average	0.35	Moderate

The POT data during treatment condition A for Classroom A were stable, and no trend was observed. Classroom A's mean percentage for POT during treatment condition A was 10% (range = 5-13%; see Figure 1, bottom panel). During treatment condition B, data were slightly variable, and had the largest range of POT all treatment conditions for this classroom. During these observed intervals, the students' in Classroom A demonstrated a mean of 10% for POT, with a range of 5-15%. Treatment condition C resulted in a mean of 6% (range = 2-12%). Treatment condition C had the lowest mean percentage of POT behavior, and data of observed intervals had a downward trend. The

weighted average of Tau-U calculations for Classroom A for POT found a moderate effect size (see Table 1).

Classroom B

AEB data during treatment condition B for Classroom B were stable, and no trend was observed. Classroom B's mean percentage of AEB during treatment condition B was 74% with a range of 72-80% (see Figure 2, top panel). During treatment condition C, data had a slight increasing trend for AEB, and observed intervals of AEB had a mean of 76% (range = 67-85%). Finally, the students' in Classroom B had a mean of 77% of observed intervals of AEB during treatment condition A (range = 73-80%). Treatment condition A had the highest mean percentage of AEB for Classroom B, and data during this condition were stable with little to no trend. Tau-U effect size calculations are shown in Table 2. The overall weighted average was 0.20, which is interpreted as a small treatment effect.

Table 2 *Effect Size Calculations for Classroom B*

	Tau-U	Effect
Academically Engaged Behavior		
Treatment Condition A/ B	0.44	Moderate
Treatment Condition B/ C	0.04	Small
Treatment Condition C/ A	0.20	Small
Weighted Average	0.20	Small
Disruptive Behavior		
Treatment Condition A/ B	0.28	Moderate
Treatment Condition B/ C	0.20	Small
Treatment Condition C/ A	0.20	Small
Weighted Average	0.09	Small
Passive Off-Task		
Treatment Condition A/ B	0.12	Small
Treatment Condition B/ C	0.04	Small
Treatment Condition C/ A	0.12	Small
Weighted Average	0.06	Small

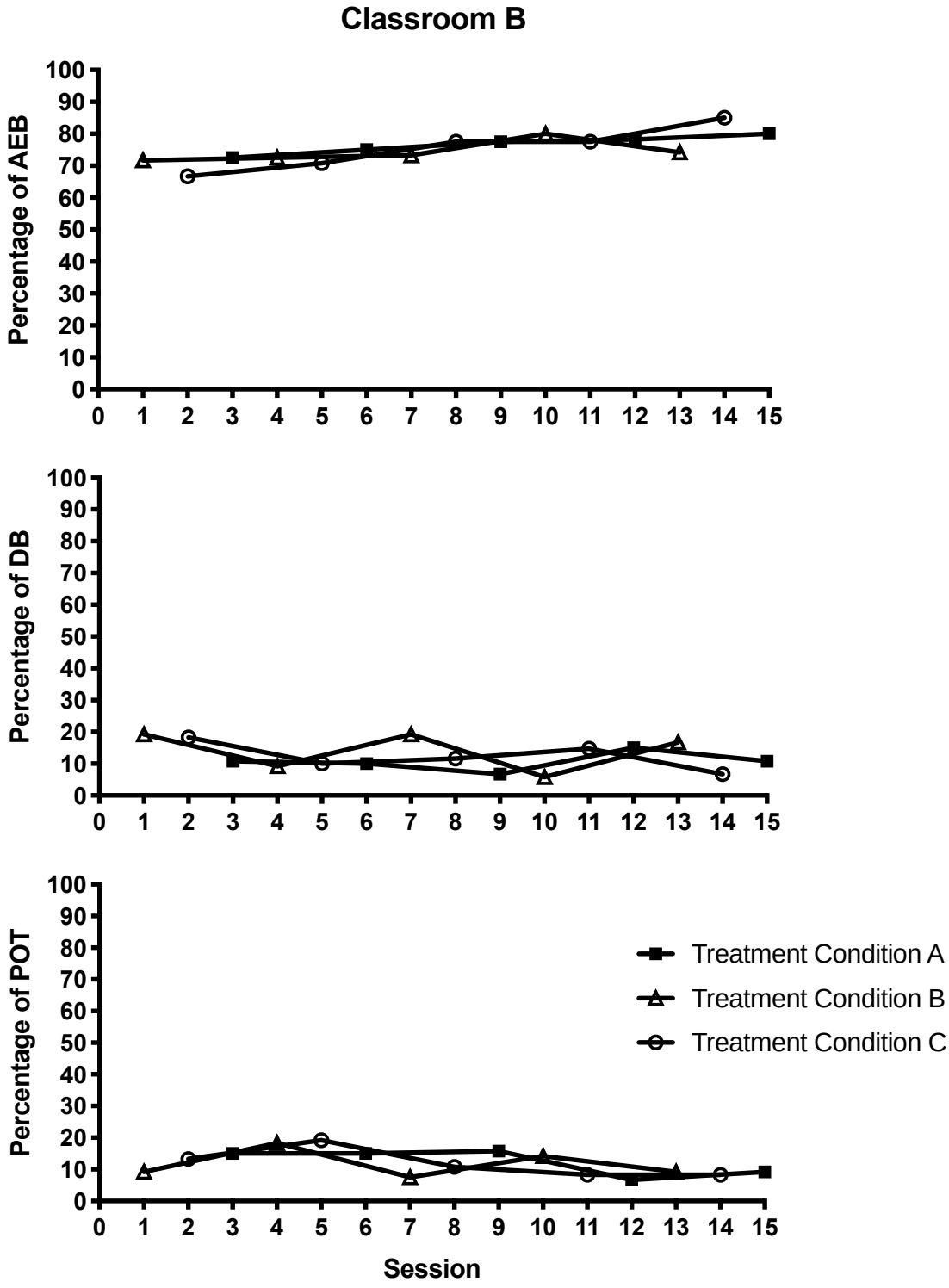

Figure 2. Classroom B's percentage of intervals of occurrence for academically engaged behavior, disruptive behavior, and passive off-task, across treatment conditions.

During treatment condition B for Classroom B, DB data were variable with little trend. The students' in Classroom B demonstrated a mean of 14% DB during treatment condition B(see Figure 2, middle panel). Next, data during treatment condition C for Classroom B's DB were relatively stable with little trend. A mean percentage of 12% of observed intervals for DB was observed during treatment condition C for the students' in Classroom B (range = 7-18%). In treatment condition A, Classroom B's mean for DB was 11% (range = 7-11%). Treatment condition C had the lowest mean percentage of DB across conditions for Classroom B, and data were stable during this condition. With that being said, the Tau-U effect size calculation (found in Table 2) of weighted average calculated a small (0.09) intervention effect.

In terms of POT for Classroom B, data during this treatment condition were variable yet the overall trend was stable. During treatment condition B POT had a mean of 12% (range = 8-18%; see Figure 2, bottom panel). In treatment condition C, on the other hand, data were less variable, with a mean percentage of 12% for DB, with a range of 8-19%. Last, during treatment condition A, data were stable, and the students in classroom B had a mean of 12% for DB (range = 7-16%). All three mean percentages of DB were 12% across treatment conditions, and little differences were seen in the ranges of the data. Thus, the effect size calculations, displayed in Table 2, found a small intervention effect of 0.06.

Classroom C

During treatment condition C, the data were stable aside from one outlying data point, and all had a downward trend. Classroom C had a mean of 80% for AEB, with a range of 63-88% (see Figure 3, top panel) during this treatment condition. For treatment

condition A, classroom C's data were stable, and had a slight increasing trend across observed intervals. The mean percentage of AEB for treatment condition A was 80% for Classroom C (range = 72-90%). The data from treatment condition B were stable with no trend observed across intervals. In terms of AEB for treatment condition B, the students' in Classroom C had a mean of 76% (range = 69-78%). Treatment conditions C and A had the same mean percentage of AEB across intervals, with treatment condition A having the higher range between the two. In terms of effect sizes, Tau-U calculations were made (see Table 3), and the overall weighted average found a small intervention effect of 0.09 for AEB.

Table 3 *Effect Size Calculations for Classroom C*

	Tau-U	Effect
Academically Engaged Behavior		
Treatment Condition A/ B	0.46	Moderate
Treatment Condition B/ C	0.67	Large
Treatment Condition C/ A	0.08	Small
Weighted Average	0.09	Small
Disruptive Behavior		
Treatment Condition A/ B	0.46	Moderate
Treatment Condition B/ C	0.67	Large
Treatment Condition C/ A	0.05	Small
Weighted Average	0.08	Small
Passive Off-Task		
Treatment Condition A/ B	0.03	Small
Treatment Condition B/ C	0.03	Small
Treatment Condition C/ A	0.03	Small
Weighted Average	0.01	Small

Data for DB during treatment condition C for Classroom C were relatively stable, and no trend was observed across intervals. Classroom C's mean percentage of DB during treatment condition C was 11%, with a range of 6-16% (see Figure 3, middle

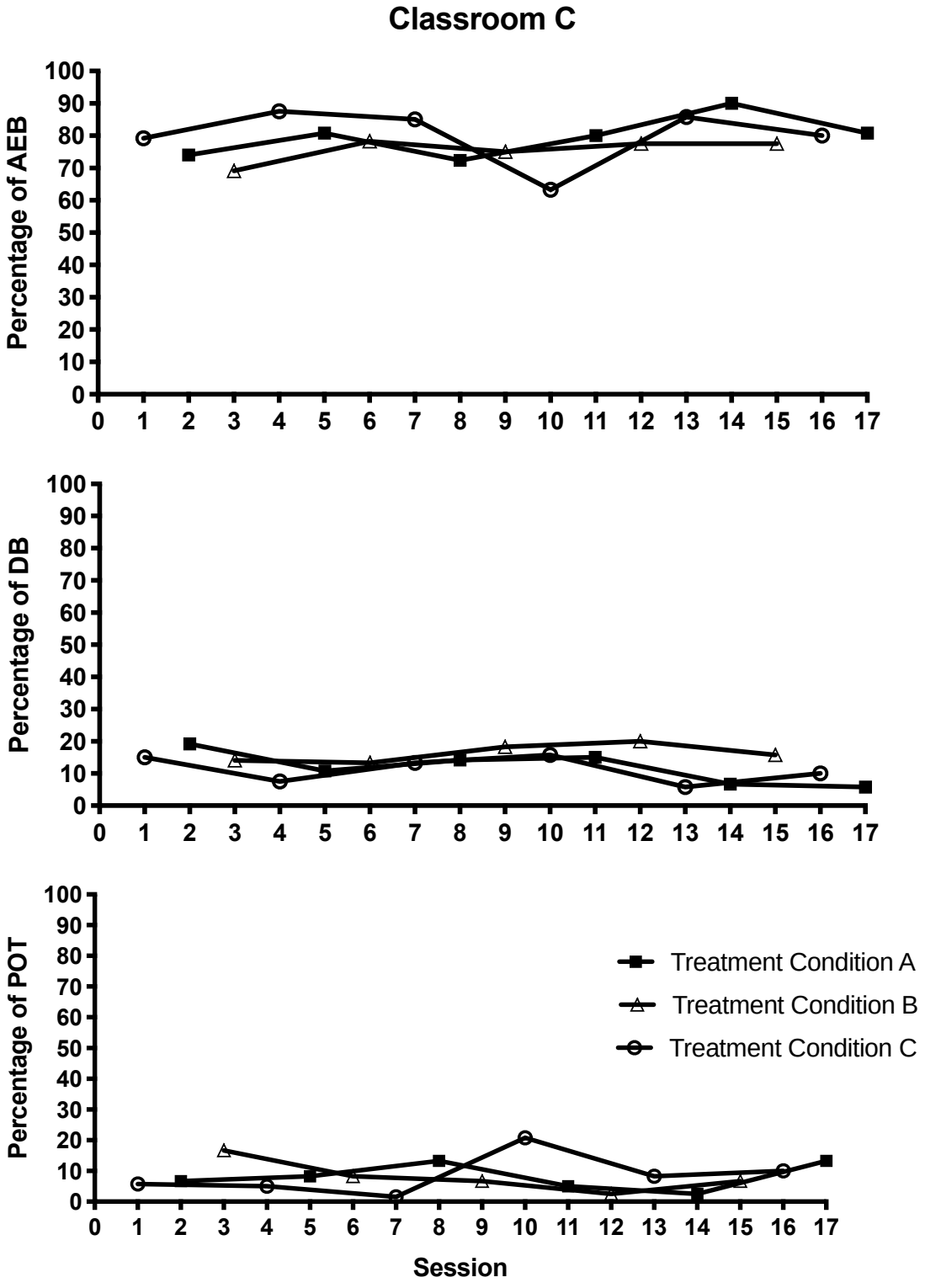

Figure 3. Classroom C's percentage of intervals of occurrence for academically engaged behavior, disruptive behavior, and passive off-task, across treatment conditions.

panel). In treatment condition A, data in this treatment condition had a downward trend across observed intervals, and the mean DB for Classroom C was 12% (range = 6-19%). Lastly, the data for treatment condition B were stable across intervals, and no trend was observed. In addition, treatment condition B resulted in a mean DB of 16%, ranging from 13-20%. In terms of DB, treatment conditions C had the lowest percentage, though data were more consistent in treatment condition B, which had the smallest range. Effect sizes were calculated using Tau-U, and a small intervention effect was found (see Table 3).

The POT data for Classroom C during treatment condition C were variable, and a large range of data were observed across intervals. During this treatment condition data had a mean of 9% for POT during treatment condition C (range = 2-22%; see Figure 3, bottom panel). For treatment condition A, data were slightly variable, though a smaller range was observed than in the prior treatment condition. During treatment condition A, Classroom C's mean percentage of POT was 8%, ranging from 3-13% across observed intervals. Finally, data during this treatment condition had a downward trend across intervals. A mean of 8% (range = 3-17%) was observed in Classroom C during treatment condition B. All three treatment conditions had comparable mean percentages of POT for Classroom C, while treatment condition A had a slightly smaller range than the other two. As a result, when Tau-U effect size calculations were made, a small intervention effect was found.

Social Validity

After the completion of all intervention treatment conditions, all participating teachers completed the URP-IR (see Table 4; Chafouleas, Briesch, Neugebauer, & Riley-

Tillman, 2011). The teacher for Classroom A completed the URP-IR and scores yielded an average of 5.7 for Acceptability of the intervention, a 5.6 for Understanding of the intervention, a 2 for necessity of Home-School collaboration when implementing this intervention, a 6 for Feasibility of the intervention, a 5.6 for System Climate in terms of this intervention, and a 2.3 for System Support needed to implement this intervention. The teacher for Classroom B completed the URP-IR and scores yielded an average score of 4 for Acceptability, a 6 for Understanding, a 1.3 for Home-School collaboration, a 4.8 for Feasibility, a 3.4 for System Climate, and a 1 for System Support. Scores from the teacher of Classroom C resulted in an average score of 5 for Acceptability, a 5.3 for Understanding, a 2 for Home-School collaboration, a 4.1 for Feasibility, a 4.6 for System Climate, and a 3 for System Support.

Table 4 *Mean Ratings for Usage Rating Profile – Intervention Revised Scale*

	Classroom		
Factor	A	B	C
Acceptability	5.7	4.0	5.0
Understanding	5.6	6.0	5.3
Home-School Collaboration	2.0	1.3	2.0
Feasibility	6.0	4.8	4.1
System Climate	5.6	3.4	4.6
System Support	2.3	1.0	3.0

In addition to the URP-IR, a brief rating scale was completed daily by participating teachers, following the treatment implementation (see Table 5). The teacher

from Classroom A rated that classwide AEB was highest during treatment condition C (M = 7.4). This rating was consistent with the direct observation calculations, such that treatment condition C had the highest mean for this class's AEB. The mean for AEB across observations for Classroom A was M = 77.7%, which was relatively close to the M = 7.4 that the teacher for this classroom rated during this treatment condition. That said, the means that the teacher for Classroom A rated for treatment conditions A (M = 4.8) and B (M = 5.8) were inconsistent with the means found through direct observation calculation, M = 73.9% and M = 72.5%, respectively. For Speed of intervention completion, the teacher from Classroom A rated that treatment condition A was the quickest to complete. Finally, for Feasibility, Classroom A's teacher rated treatment condition C as the easiest to implement.

Next, the teacher from Classroom B rated classwide AEB behavior as highest during treatment condition A (M = 8.8). This rating was consistent with the direct observation calculations, in that treatment condition A had the highest mean for this class's AEB, relative to the other treatment conditions. Though treatment condition A had the highest mean for direct observation calculations—M = 76.7%—this was lower than the rating provided by the teacher for this classroom. In addition, the mean ratings provided by the teacher for Classroom B for classwide AEB during treatment condition B (M = 8.2) and C (M = 6.75), were also inconsistent with direct observation calculations (M = 74.3%; M = 75.5%). For Speed of intervention completion, the teacher from Classroom B rated treatment condition's A and C as equally as quick to complete. Finally, Classroom B's teacher rated treatment condition A the highest for Feasibility, that is treatment condition A was the easiest to complete.

Table 5 *Mean Ratings for the daily rating scale*

	Treatment Condition		
Factor	A	B	C
Classwide On-Task (AEB)			
Classroom A	4.8	5.8	7.4
Classroom B	8.8	8.2	6.75
Classroom C	8	7	7.7
Speed			
Classroom A	5.7	5.2	4.8
Classroom B	5.4	5.4	4.75
Classroom C	5.5	4.8	6.7
Feasibility			
Classroom A	5.3	5.6	6
Classroom B	5.4	5	4.5
Classroom C	5.3	4.4	4.3
Overall Mean across teachers			
Classwide On-Task (AEB)	7.2	7	7.3
Speed	5.5	5.1	4.7
Feasibility	5.4	5	4.9

Lastly, the teacher for Classroom C rated classwide AEB as highest for treatment condition A (M = 8.0). This rating was not consistent with the direct observation calculations. For this class, treatment condition C had the highest mean for AEB (M = 80.14%), though it was less than half a percentage higher than the mean percent of AEB for treatment condition A. The mean rating for treatment condition B and C, for Classroom C's teacher, were M = 7.0 and M = 7.7 respectively. Whereas, the mean percentage of AEB calculated through direct observations for this class's treatment

conditions A and B were, M = 79.67% and M = 75.50%, respectively, where the rating for treatment condition B was inconsistent with teacher ratings. For Speed, this teacher rated treatment condition A as the quickest to complete. And finally, Classroom C's teacher rated treatment condition A as the most Feasible to complete. When an average is taken across all teacher responses, all three conditions were equal in terms of which resulted in the highest classwide AEB, though treatment A is rated higher in both Speed and Feasibility, as expected.

CHAPTER IV – DISCUSSION

Research Question 1

The primary research question for this study addressed whether there was a functional relation between the implementation of 1, 3, or 5 OTR per minute and higher classwide rates of AEB. It was hypothesized that the implementation of 5 OTR per minute would result in the highest rates of classwide AEB, in comparison to 1 or 3 OTR per minute. Visual analysis of the results of this study, though, did not indicate a consistent relation between rates of classwide AEB and a certain rate of OTR provided per minute in the participating classrooms. These results do not support the CEC guideline for the rate of OTR to provide per minute (CEC, 1987). The CEC recommends a rate of 4-6 OTR provided per minute for children with high-incidence disabilities, although no previous studies have researched the effects of different rates of OTR needed for general education students. This study is the first to evaluate the effects of differing rates of OTR on classwide rates of AEB in general education classrooms, and the results do not indicate a functional relation between higher rates of OTR per minute and higher rates of classwide AEB. In addition to visual analysis, Tau-U effect size calculations resulted in scores in the small to moderate range for increasing AEB when comparing treatment conditions in this study.

This current study extended previous research on the usability of OTR as an intervention to alter AEB by providing necessary information on the rate of OTR to provide. Due to the lack of increased AEB across treatment conditions, under the conditions of this study, higher rates of OTR were not beneficial over lower rates. This is an interesting finding, as the implementation of higher rates of OTR is more time

consuming and a higher difficulty intervention to implement. Thus, the results of this study suggest that a less time-consuming intervention may have results similar to that of the implementation of higher rates of OTR.

Research Question 2

Similarly, the second research question was aimed at determining if there was a functional relation between implementation of 1, 3, or 5 OTR per minute and lower rates of classwide DB. Though it was hypothesized that the implementation of 5 OTR would result in a lower rates of classwide DB, visual analysis of the results did not reflect a functional relation between these variables in this study. In addition to visual analysis, Tau-U effect size calculations resulted in scores in the small range for decreasing DB when comparing treatment conditions.

With the results of the first two research questions in mind, it is important to consider the quality of an OTR. Quality of OTR was not evaluated in the study and may have an effect on the results that were found in this study. Guidelines and requirements were put in place for the total number of OTR to provide during each observation, but the same regulations/restrictions were not in place to establish consistency of the quality of questions that were provided in this study. The quality of, or variety of, questions used may result in improved student engagement and results. Similarity, the effectiveness of the person that was implementing the OTR was also not evaluated in this study. It may have been helpful to consider and evaluate the consistency of delivery within and across classrooms to determine the effect that this variable may have.

Research Question 3

The goal for the final research question was to examine if elementary school teachers would rate the use of increasing OTR as a socially valid method for addressing student behavior. Results from the URP-IR indicated that teacher's level of acceptability of the intervention ranged from a score of 4.0-5.7 out of 6. In addition, on the daily rating scale, teachers' rated classwide AEB, and mean scores indicated that the teacher in Classroom A ranked classwide AEB as highest during Treatment Condition C (5 OTR per minute), whereas the remaining two teachers ranked classwide AEB as highest during Treatment Condition A (1 OTR per minute). These teacher rankings of classwide AEB also support the findings from research question 1, in that in this study there was little to no differentiation in data between implementing higher or lower rates of OTR.

Limitations

When assessing the results that were found in this study, it is important to consider possible limitations that may have been present. First and foremost, the intervention in this study was only implemented in three classrooms, and all classrooms were from a single rural elementary school in a Southeastern state. As a result, generalizability of these results may be limited. Thus, it would be beneficial to replicate this study as a way to determine if similar results would be reached in differing populations and settings.

In addition, no baseline data were collected prior to the parametric analysis, in this study. Though this did not hinder the answering of the research questions, it may have been beneficial to see if there was an increase in AEB from baseline to the various treatment conditions.

As stated prior, another limitation of this study was that the quality of OTR provided was not evaluated. Inconsistent delivery or varying qualities of delivery may have altered the results of this study. Similarly, although guidelines were put in place for the quantity of OTR to be provided during each observation, teachers in this study did not always reach this limit and at times exceeded it even with precautionary measures put in place. Thus, this lack of consistency could have affected the results that were found in this study.

In addition, this study did not evaluate classroom management procedures that were in place in the classroom. It may have been beneficial to evaluate classroom management procedures prior to implementation of this intervention as a way to determine if there are any basic behavior management procedures that may be necessary to implement as a prerequisite to this intervention (e.g., positive reinforcement contingencies, proximity, rule posting, etc.).

Possible Future Research

As stated prior, this intervention should be replicated in various settings as a way to evaluate if similar effects would be found across studies. It would also be beneficial for future studies to evaluate other benefits that OTR may have, such as improved academic performance with varying OTR, which was not assessed during this study. Academic outcomes have been evaluated following increases in OTR by both MacSuga-Gage and colleagues (2015), as well as Blood (2010). In both of these studies, results found no significant effects between an increase in OTR and student academic achievement, though other researchers have found increased academic achievement following OTR increases (Narayan et al., 1990; Heward & Grossi, 1994; Sutherland & Wehby, 2001;

Davis & O'Neill, 2004). With that being said, it would be beneficial for a study to compare varying rates of OTR on academic achievement to determine if there is a rate of OTR that improves academic achievement more than others. Future studies could also evaluate the effect that quality of OTR has on AEB. This was not evaluated in this study and it may be beneficial to understand the relationship that quality of OTR has on results.

Implications for Practice

The results of this study suggest that similar rates of AEB would be found when delivering rates of 1, 3, or 5 OTR per minute as a classwide intervention. Thus, this study did not find data supporting the use of providing higher rates of OTR per minute versus lower rates of OTR per minute. Thus, when conditions are similar to that of this study, lower rates of OTR provided might have a similar effect on behavior as implementing higher rates of OTR would. With that said, this was a preliminary study, as a result replications and additives to future research studies are needed to confirm the findings from this study.

APPENDIX A – School Consent Form

Lumberton Elementary School
Address: 7922 US – 11
Lumberton, MS 39455
Phone: (601) 796-3721

March 19, 2017

Dear Institutional Review Board of The University of Southern Mississippi,

Morgan McCargo has approached me with a research project idea that she would like to implement on campus at Lumberton Elementary School. I have met with Ms. McCargo and given approval of the project with details to be determined as target classrooms are identified.

If you have any questions or concerns about my support of Ms. McCargo's research project, please contact me at the school.

Sincerely,

Principal
Lumberton Elementary School

APPENDIX B IRB Approval Form

THE UNIVERSITY OF
SOUTHERN MISSISSIPPI

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS 39406-0001
Phone: 601.266.5997 | Fax: 601.266.4377 | www.usm.edu/research/institutional.review.board

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
  Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 18013101
PROJECT TITLE: The Effects of Three Variations of Opportunities to Respond Per Minute on Academically Engaged Behavior
PROJECT TYPE: Graduate Project
RESEARCHER(S): Morgan McCargo
COLLEGE/DIVISION: College of Education and Psychology
DEPARTMENT: Psychology
FUNDING AGENCY/SPONSOR: N/A
IRB COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 02/01/2018 to 01/31/2019
Lawrence A. Hosman, Ph.D.
Institutional Review Board

APPENDIX C – Teacher Information & Consent Form

THE EFFECTS OF THREE VARIATIONS OF OPPORTUNITIES TO RESPOND PER MINUTE ON ACADEMICALLY ENGAGED BEHAVIOR

The purpose of this study is to investigate the effects of an intervention using opportunities to respond to increase academically engaged behavior and decrease disruptive behavior classwide. Students in elementary school (grades 1-6) and their teachers can participate in this study, specifically classrooms that exhibit disruptive behavior. Your permission is requested to participate in this study.

Methods and Procedures: Upon agreeing to participate, you will be contacted by the primary researcher to obtain information regarding your class' overall disruptive behaviors and to determine target behaviors to be observed. If the criterion for inclusion is not met, you may request services through an alternative intervention. If the criterion of 70% classwide academically engaged behavior *is* met, you will be asked to implement the OTR intervention. The primary researcher will train you in implementing the intervention using all necessary materials. In consultation with the primary researcher, you will select the target behaviors to be observed.

The researcher and trained graduate students will conduct observations during the previously decided time when disruptive behavior is most likely to occur during a learning activity. Disruptive behaviors of concern and appropriate behaviors you wish to improve will be observed and recorded.

Benefits: Your benefits by participating in this study may include observed improvements in student behavior, learning a unique intervention designed to improve student behavior, and an incentive provided by the primary researcher upon completion of the entire study.

Risks and Discomfort: There are few anticipated risks associated with participation. Initially, you may not be comfortable with the time required to implement this intervention in your classroom. You also may not feel comfortable implementing an unknown and new procedure in your classroom. However, you will be provided with training by the primary investigator as well as any additional materials needed for implementation. The primary investigator will also be available to answer any questions you may have. Throughout the experiment, your students' behavior will be monitored. In the event that undesired and unanticipated effects arise (e.g., increase in disruptive behaviors during the intervention), modifications or termination of procedures will occur, and you and your students will be provided with other services.

Confidentiality of Records: All interviews, observations, and other information obtained during this study will be kept strictly confidential. Your name, students' names, and other identifying information will not be disclosed to any person not connected with this study. Results from this research project may be shared at professional conferences or published in scholarly journals; however, all identifying information will be removed from presentations and/or publications.

Voluntary Participation: Your participation in this study is voluntary. You may withdraw from this study at any time without penalty, prejudice, or loss of benefits. Whereas no assurance can be made concerning results that may be obtained (as results from investigational studies cannot be predicted), the primary investigator will take every precaution consistent with the best scientific practice.

Teacher's Consent: If you agree to participate, please read, sign, and return the following page. Please keep this letter for your records. If you have any questions about this study, please contact Morgan McCargo or Dr. Keith Radley (Phone: 601-266-6748; Email: morgan.mccargo@eagles.usm.edu; keith.radley@usm.edu). This project and this consent form have been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject should be directed to the Institutional Review Board Office, The University of Southern Mississippi, Box 5147, Hattiesburg, MS 39406-5147; (601) 266-6820.

Sincerely,

_____	_____
Morgan McCargo, M.A.,	Keith Radley, Ph.D.
School Psychologist-in-Training	Supervising Licensed Psychologist
Department of Psychology	Department of Psychology
The University of Southern Mississippi	The University of Southern Mississippi

THIS SECTION TO BE COMPLETED BY TEACHER

Please Read and Sign the Following:

I have read the above documentation and consent to participate in this project. I have had the purpose and procedures of this study explained to me and have had the opportunity to ask questions. I am voluntarily signing this form to participate under the conditions stated. I have also received a copy of this consent. I understand that I will be asked to implement a classroom-based intervention, and observations will be conducted in the classroom on the students' behavior. In order to do so, I will be required to complete a consultation session, to implement the intervention, and to complete a structured questionnaire to assess my satisfaction with the intervention. In addition, I will be trained on all of the intervention procedures by the primary researcher. I further understand that all data collected in this study will be confidential and that my name and the students' names will not be associated with any data collected. I understand that I may withdraw my consent for participation at any time without penalty, prejudice, or loss of privilege.

_____ _____

Signature of Teacher *Date*

_____

Signature of Witness

APPENDIX D Teacher Demographics Form

(completed by the teacher)

Teacher Demographics:

Age _____

Number of years teaching _____

Race _____

Gender _____

Highest Degree earned _____

Classroom Demographics:

Number of students in the class _____

Number of: Males _____ Females _____

Number of: African-American _____ Asian _____ Caucasian _____

Hispanic _____

Number of SPED students in your classroom: _____

Please list the disability categories of each child in SPED (do not include names or any other identifying information):

_____

_____

_____

_____

APPENDIX E Teacher Training Script

1. Describe opportunities to respond

Say: Classwide opportunities to respond can be described as the presentation of a question related to the class material that you present to the class that gets a response from the students, which is then followed by feedback about the response given (your correction or encouragement if they got the answer correct).

2. Provide example

Say: One example of a classwide OTR would be "What do you call the smaller of the two leg bones located below the knee cap?"

3. Provide non example

Say: One example that does not qualify as a classwide OTR is, "Johnny, what do you call the smaller of the two leg bones located below the knee cap?" Another non-example would be, "What is today's date?"

4. Set criteria for daily OTR

Say: In this stage of the study, during each observation you will need to provide a specified number of opportunities to respond to the class (discussed as a rate per minute; i.e.: 1, 3, or 5, per minute). Please provide exactly that number, no more or less, and avoid accidentally slipping in other questions at that time. Each day I will come in with a sign that indicates the number of OTR to provide that day (and I will confirm with you this number after the observation the day prior for you to have time for preparation). **Provide teacher with intervention schedule**

5. Have teacher provide example of a classwide OTR

Say: Now I want you to practice. Can you give me three classwide OTR examples?

6. Provide feedback for their examples

7. Double check time frame that works for observation

Time & Days: _____

_____

_____

8. Ask if the teacher has any questions

APPENDIX F Daily Rating Scale

(completed by the teacher)

Name:_____ Date:_____

1. The class was on-task today:

1	2	3	4	5	6	7	8	9	10
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

2. The intervention was completed quickly today:

1	2	3	4	5	6
Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree

3. The intervention was easy for me to implement today:

1	2	3	4	5	6
Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree

---

(completed by the observer)

OTR Required: _____ Presented: _____

Observer: _____ IOA: N Y _____

_____ / _____ = _____

APPENDIX G Usage Rating Profile – Intervention Revised

URP-Intervention

Directions: Consider the described intervention when answering the following statements. Circle the number that best reflects your agreement with the statement, using the scale provided below.

		Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1.	This intervention is an effective choice for addressing a variety of problems.	1	2	3	4	5	6
2.	I would need additional resources to carry out this intervention.	1	2	3	4	5	6
3.	I would be able to allocate my time to implement this intervention.	1	2	3	4	5	6
4.	I understand how to use this intervention.	1	2	3	4	5	6
5.	A positive home-school relationship is needed to implement this intervention.	1	2	3	4	5	6
6.	I am knowledgeable about the intervention procedures.	1	2	3	4	5	6
7.	The intervention is a fair way to handle the child's behavior problem.	1	2	3	4	5	6
8.	The total time required to implement the intervention procedures would be manageable.	1	2	3	4	5	6
9.	I would not be interested in implementing this intervention.	1	2	3	4	5	6
10.	My administrator would be supportive of my use of this intervention.	1	2	3	4	5	6
11.	I would have positive attitudes about implementing this intervention.	1	2	3	4	5	6
12.	This intervention is a good way to handle the child's behavior problem.	1	2	3	4	5	6
13.	Preparation of materials needed for this intervention would be minimal.	1	2	3	4	5	6

USAGE RATING PROFILE

		Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
14.	Use of this intervention would be consistent with the mission of my school.	1	2	3	4	5	6
15.	Parental collaboration is required in order to use this intervention.	1	2	3	4	5	6
16.	Implementation of this intervention is well matched to what is expected in my job.	1	2	3	4	5	6
17.	Material resources needed for this intervention are reasonable.	1	2	3	4	5	6
18.	I would implement this intervention with a good deal of enthusiasm.	1	2	3	4	5	6
19.	This intervention is too complex to carry out accurately.	1	2	3	4	5	6
20.	These intervention procedures are consistent with the way things are done in my system.	1	2	3	4	5	6
21.	This intervention would not be disruptive to other students.	1	2	3	4	5	6
22.	I would be committed to carrying out this intervention.	1	2	3	4	5	6
23.	The intervention procedures easily fit in with my current practices.	1	2	3	4	5	6
24.	I would need consultative support to implement this intervention.	1	2	3	4	5	6
25.	I understand the procedures of this intervention.	1	2	3	4	5	6
26.	My work environment is conducive to implementation of an intervention like this one.	1	2	3	4	5	6
27.	The amount of time required for record keeping would be reasonable.	1	2	3	4	5	6
28.	Regular home-school communication is needed to implement intervention procedures.	1	2	3	4	5	6
29.	I would require additional professional development in order to implement this intervention.	1	2	3	4	5	6

USAGE RATING PROFILE

APPENDIX H Problem Identification Interview Form

Teacher: _____ Class Period: _____ Date:_____

1. Describe the class' behavior problems in order of severity and give examples.

2. How manageable is the problem behavior?

3. In what settings does the problem behavior occur?

4. Goals for the problem behavior (what would you like to see happen)

5. Tell me about what happens before the behavior occurs. After the behavior occurs?

6. Intervention attempts, degree of success, reasons for failure.

a. What procedures have you tried in the past to deal with this problem behavior?

b. What, if anything, have you done to deal with similar behavior problems in the past?

c. What's worked? What hasn't?

7. Rules and typical procedures carried out in the classroom (constraints and assets).

8. Reinforcers - used now and potentials for future (e.g., praise, activities, or notes sent home).

9. Any data collected presently?

10. Ask teacher for any additional comments or questions.

Adapted from Kratochwill, T. R., & Bergan, J. R. (1990). *Behavioral consultation in applied settings: An individual guide.* New York, NY: Plenum Press.

APPENDIX I Observation Form

Class:_____ Date:_____

Observer:_____ IOA: N Y _____ Condition:_____

Interval	AEB	DB	Interval	AEB	DB	Interval	AEB	DB	Interval	AEB	DB
1.1			6.1			11.1			16.1		
1.2			6.2			11.2			16.2		
1.3			6.3			11.3			16.3		
1.4			6.4			11.4			16.4		
1.5			6.5			11.5			16.5		
1.6			6.6			11.6			16.6		
2.1			7.1			12.1			17.1		
2.2			7.2			12.2			17.2		
2.3			7.3			12.3			17.3		
2.4			7.4			12.4			17.4		
2.5			7.5			12.5			17.5		
2.6			7.6			12.6			17.6		
3.1			8.1			13.1			18.1		
3.2			8.2			13.2			18.2		
3.3			8.3			13.3			18.3		
3.4			8.4			13.4			18.4		
3.5			8.5			13.5			18.5		
3.6			8.6			13.6			18.6		
4.1			9.1			14.1			19.1		
4.2			9.2			14.2			19.2		
4.3			9.3			14.3			19.3		
4.4			9.4			14.4			19.4		
4.5			9.5			14.5			19.5		
4.6			9.6			14.6			19.6		
5.1			10.1			15.1			20.1		
5.2			10.2			15.2			20.2		
5.3			10.3			15.3			20.3		
5.4			10.4			15.4			20.4		
5.5			10.5			15.5			20.5		
5.6			10.6			15.6			20.6		

Occurrence of AEB = _____/120 = _____% IOA for AEB = _____/120 = _____%

Occurrence of DB = _____/120 = _____% IOA for DB = _____/120 = _____%

Occurrence of POT = _____/120 = _____% IOA for POT = _____/120 = _____%

AEB will be defined as "the student being actively involved or attending to (e.g. looking at) independent seatwork, teacher instruction, designated classroom activities, and/or engaging in task related vocalizations with teachers and/or peers" (Lambert et al., 2015, p. 418).

DB will incorporate the definition from *The Tough Kid Tool Box* (i.e., playing with objects, out of seat, noncompliance, and talking out; Jenson et al., 1995), as well as the behaviors discussed in the PII (_____).

APPENDIX J Procedural Integrity for OTR Teacher Training

(completed by the observer)

Class:_____ Date:_____

Observer:_____ IOA: N Y _____

	Intervention Steps	Yes	No
1	Describe OTR using script		
2	Provide example		
3	Provide non-example		
4	Provide list of intervention order		
5	Have teacher provide 3 examples		
6	Provide feedback for their examples		
7	Set time and days to observe		
8	Ask if the teacher has any questions		

Number of steps competed: /8 = _____%

APPENDIX K Treatment Integrity for 20 OTR (**1/min**)

(completed by the observer)

Class:_____ Date:_____

Observer:_____ IOA: N Y _____

	Intervention Steps	Yes	No
1	Asks 5 questions		
2	Asks 10 questions		
3	Asks 15 questions		
4	Asks 20 questions		
5	Display board is present		
6	Display board is utilized		
7	Does not ask more than 20 questions		

Number of steps competed: /7 = _____%

APPENDIX L Treatment Integrity for 60 OTR (**3/min**)

(completed by the observer)

Class:_____ Date:_____

Observer:_____ IOA: N Y _____

	Intervention Steps	Yes	No
1	Asks 5 questions		
2	Asks 10 questions		
3	Asks 15 questions		
4	Asks 20 questions		
5	Asks 25 questions		
6	Asks 30 questions		
7	Asks 35 questions		
8	Asks 40 questions		
9	Asks 45 questions		
10	Asks 50 questions		
11	Asks 55 questions		
12	Asks 60 questions		
13	Does not ask more than 60 questions		
14	Display board is present		
15	Display board is utilized		

Number of steps competed: /15 = _____%

APPENDIX M Treatment Integrity for 100 OTR (**5/min**)

(completed by the observer)

Class:_____ Date:_____

Observer:_____ IOA: N Y _____

	Intervention Steps	Yes	No
1	Asks 5 questions		
2	Asks 10 questions		
3	Asks 15 questions		
4	Asks 20 questions		
5	Asks 25 questions		
6	Asks 30 questions		
7	Asks 35 questions		
8	Asks 40 questions		
9	Asks 45 questions		
10	Asks 50 questions		
11	Asks 55 questions		
12	Asks 60 questions		
13	Asks 65 questions		
14	Asks 70 questions		
15	Asks 75 questions		
16	Asks 80 questions		
17	Asks 85 questions		

18	Asks 90 questions		
19	Asks 95 questions		
20	Asks 100 questions		
21	Does not ask more than 100 questions		
22	Display board is present		
23	Display board is utilized		

Number of steps competed: /23 = _____%

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